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ABSTRACT

Noting that parental involvement is an important factor in student success, this study examined differences in student learning in reading and mathematics related to levels of parental volunteerism in kindergarten, after controlling for differences in testing scores at the beginning of the school year. The study drew on data from the National Center for Education Statistics Early Childhood Longitudinal Study (kindergarten class of 1998-1999). The results of multivariate analysis of covariance indicated that parental volunteerism in kindergarten raised reading test scores, but it did not have an impact on mathematics test scores. Further analysis showed that parental volunteerism in schools is optimum at a "medium" level (26 to 50 percent) for increasing reading test scores. (Contains 12 references.) (HTH)

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Parental Volunteerism in Kindergarten: Assessing its Impact in Reading and Mathematics Tests

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Abstract

Kindergarten is considered a critical transitional point for children. Kindergarten is a strong foundation for future learning. Parental involvement is also an important factor in student success in school. In this paper, public schools Kindergartners students were researched using the National Center for Education Statistics Early Childhood Longitudinal Study (Kindergarten class of 1998-1999). The purpose was to study differences in student learning on reading and mathematics related to levels of parental volunteerism in Kindergarten, after controlling for initial differences in testing scores at the beginning of the school year. The results of the multivariate analysis of covariance indicated that parental volunteerism in Kindergarten raised reading test scores, but it did not have an impact on mathematics test scores. Further analysis showed that parental volunteerism in schools is optimum at a "medium" level (26-50%) for increasing reading test scores.

Parental Volunteerism in Kindergarten: Assessing its Impact in Reading and Mathematics Tests

The purpose of this study was to examine the impact of parental volunteerism on Kindergarten student achievement. The parental involvement factor was studied to answer the following research question: What is the impact of the parental volunteerism on Kindergarten students' cognitive measures such as reading and mathematics? What is the optimum level of parental volunteerism in Kindergarten?

As we all know, young children need knowledge and new experiences to develop and thrive. Schools offer a plethora of learning and development opportunities for children. Children begin kindergarten with different levels of knowledge and skills based on their background. The more disadvantaged may catch up on basic skills in reading and math during the kindergarten year. However, when it comes to more sophisticated reading and math knowledge and skills, the gap widens.

A positive connection between quality educational experiences in the preschool years, readiness for kindergarten and later learning outcomes have been shown in studies conducted by the National Research Council. Advantages in literacy resources and activities, language development and some aspects of social and physical development are correlated with higher socioeconomic status.

For the aforementioned reasons, states are finding it more important that children from lower income backgrounds have access to quality early childhood

education (Dwyer, Chait, & McKee, 2000). Participation in an early childhood education program can provide preschoolers with skills and enrichment that can increase their chances of success in school (U.S. Department of Education, 2001).

Many studies show that family environment is an important factor in the cognitive development of children (McGillicuddy-DeLisi, 1982). A child is more likely to identify with a warm, affectionate parent and thus imitate and obey the adult (MacPhee, et al, 1984). Students living in nontraditional families are significantly less likely to have parents who participated in at least 3 of 4 activities than students living in traditional families (U.S. Department of Education, 2000). Stepparents tend to be less involved than biological parents in their children's schools, but their involvement can be associated with better outcomes for students.

In general, the association between the school involvement of stepparents and student outcomes is the same as biological parents in a traditional family. Single mothers and fathers are involved in their children's schools and their involvement is associated with better school outcomes for their children. Nonresident mothers are more likely than nonresident fathers to maintain contact with their children and to be involved in their children's schools. The association between their involvement and students' outcomes is weaker than that of nonresident fathers' involvement.

The percentage of children living with one parent increased from 20% in 1980 to 26% in 2000. The proportion of children living with single fathers

doubled from 2% in 1980 to 4% in 2000 (U.S. Department of Education, 2000). According to this report, about 50% of the risk associated with single mother family structure is due to lower family income of single mothers.

Parents who participate with their children in socially stimulating and intellectually stimulating interaction have children with relatively greater intellectual competence (MacPhee, et al, 1984). Children of single mothers are at higher risk than those from two-parent families for dropping out of high school and early pregnancy (Huston, 1997). Positive developmental outcomes are facilitated and nurtured by qualities in the mother-child relationship that create learning opportunities for children in their environment (Matzicopoulos, 1997).

The research that follows is based on some of the information provided above regarding the importance of parental involvement, early childhood and Kindergarten education. Combining the two issues, secondary data was used to determine if children in Kindergarten public school programs perform better when parents volunteer in school activities. The overarching research question that guided the study follows:

> Is there a statistically significant difference in student learning (operationalized as standardized reading and mathematics test scores) related to levels of parental volunteerism in Kindergarten, after controlling for initial differences in reading and mathematics standardized testing scores at the beginning of the Kindergarten school year?

Method

Data previously collected by the Early Childhood Longitudinal Study Kindergarten class 1998-1999 was used. For the first time, national data was available on public kindergarten programs and the children who attend them. The longitudinal nature of this study enables researchers to study children's reading and mathematic achievement; it also permits to relate trajectories of growth to variation in children's school experiences and parent's school involvement.

A quantitative design was used to study the research problem (Pedhazur & Schmelkin, 1991). The analytical procedure used was a multivariate analysis of covariance (MANCOVA). Transformations were used to recode parental involvement levels. Assumptions were checked for conducting the multivariate test (Stevens, 1996).

Although the national database has private and public students information, the data included in the study were only public school Kindergartners. Demographic information included students race (53% white, 47% minority), sex (51% male, 49% female), and birth date (five years old). The independent variable was parental involvement level as measured on the school administrator questionnaire (parental volunteerism versus non-parental volunteerism in the kindergarten year). The covariates were the children pretest scores in reading and mathematics at the beginning of Kindergarten as measured on the child assessment scales. Finally, the dependent variable was the posttest scores in reading and mathematics as measured also in the child assessment.

Findings

Multivariate results showed a Wilks' Lambda of 3.826 that was statistically significant at .004 alpha level. This means that reading and mathematics showed an overall significant difference between the two groups (i.e., parental volunteerism versus non-parental volunteerism). Furthermore, univariate follow-up results of the original multivariate procedure showed that the difference was on reading [$F (2, 9601) = 6.577$, $p < .001$], but not on mathematics [$F (2, 9601) = 2.882$, $p < .056$] test scores.

In addition, to further understand the research problem, post-hoc comparisons using the Bonferroni procedure were conducted. The post-hoc Bonferroni procedure showed differences between the low (0-25%) and medium (26-50%) level of volunteerism. No other post-hoc comparison differences were found among the levels of parental volunteerism.

The researcher found that parental volunteerism in Kindergarten raised the reading test scores at a statistically significant level. However, parental volunteerism in Kindergarten did not impact mathematics test scores. In addition, findings showed that parental volunteerism in the area of reading are optimum at a "medium" level (26-50%).

Conclusions

According to Murphy (1991), efforts should be made to expand the "school community," to unite parents, professional educators, businesses, universities, foundations, and the general populace into a collective force dedicated to the improvement of schooling for all children. For example, policies and programs

cannot concentrate solely on the child, but most simultaneously address the needs of two generations –the parent and the child—for they are interdependent.

The issue is that most educationally advantaged students receive several times more education-relevant resources than most educationally disadvantaged students: most of this resource advantage is due to variations in family resources rather than school resources (Miller, 1995, p. 94). The author discusses five categories of capital, namely human capital, social capital, health capital, financial capital, and polity capital, which are necessary for a child to be academically successful in the education arena. For instance, in terms of social capital, the child benefits when adults, with whom the children have a close relationship, take a strong interest in their education. In this sense, the school resources are just one side of the coin: the family resources or lack of are the other side of the coin.

Multiple limitations affected this exploratory research. No information about the activities and quality of parental volunteerism was included. No control for socio-demographic characteristics such as participation on free/reduced lunch. Also, no information about parents' education background was included in the analysis. Further research should continue to explore the effectiveness of social and school-based interventions with different methodological procedures such as Hierarchical Linear Models (HLM), by analyzing school, teacher, and student level variables simultaneously. Finally, other non-academic measures (e.g., attendance, suspensions) need to be explored as dependent variables in future research.

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